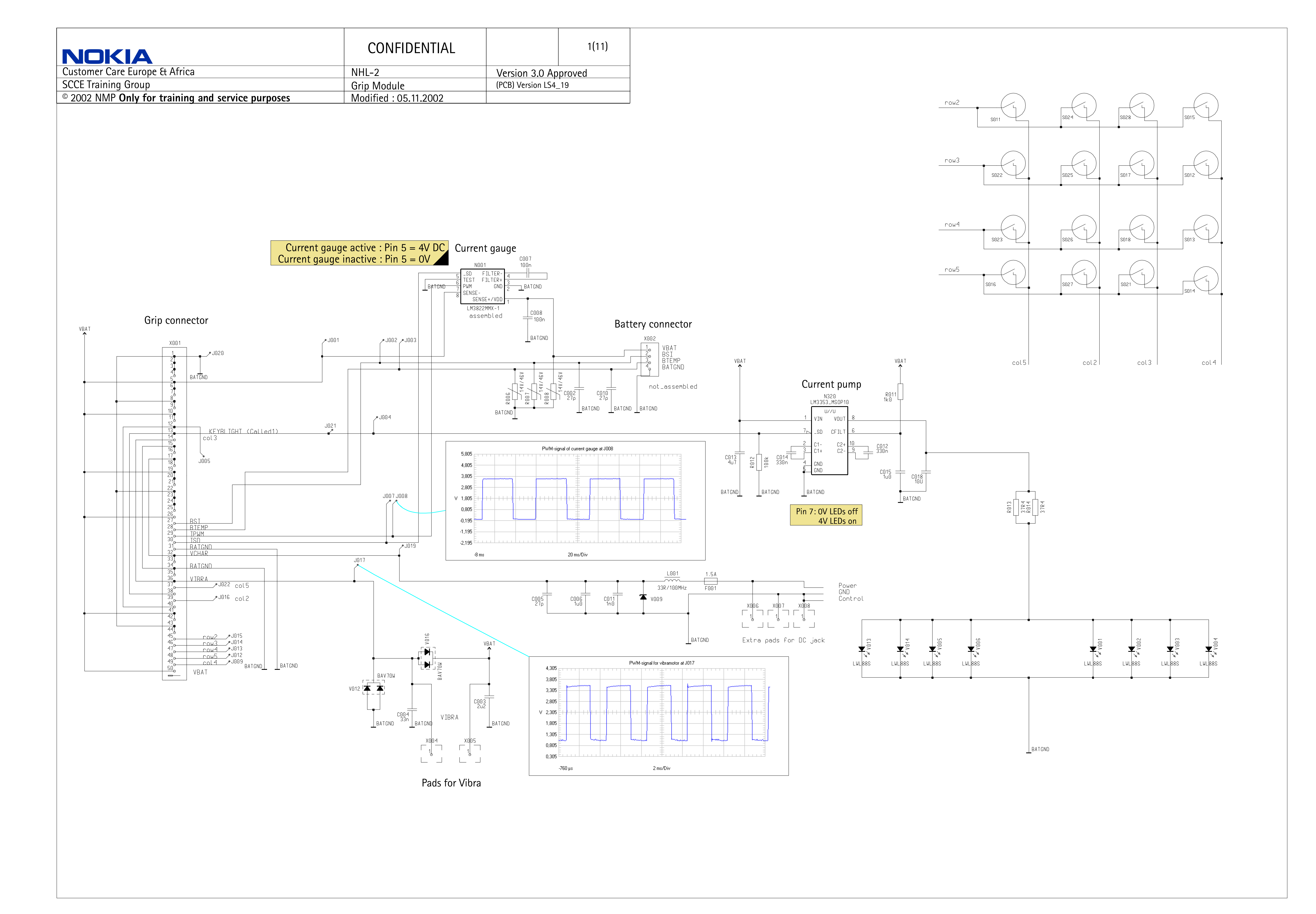
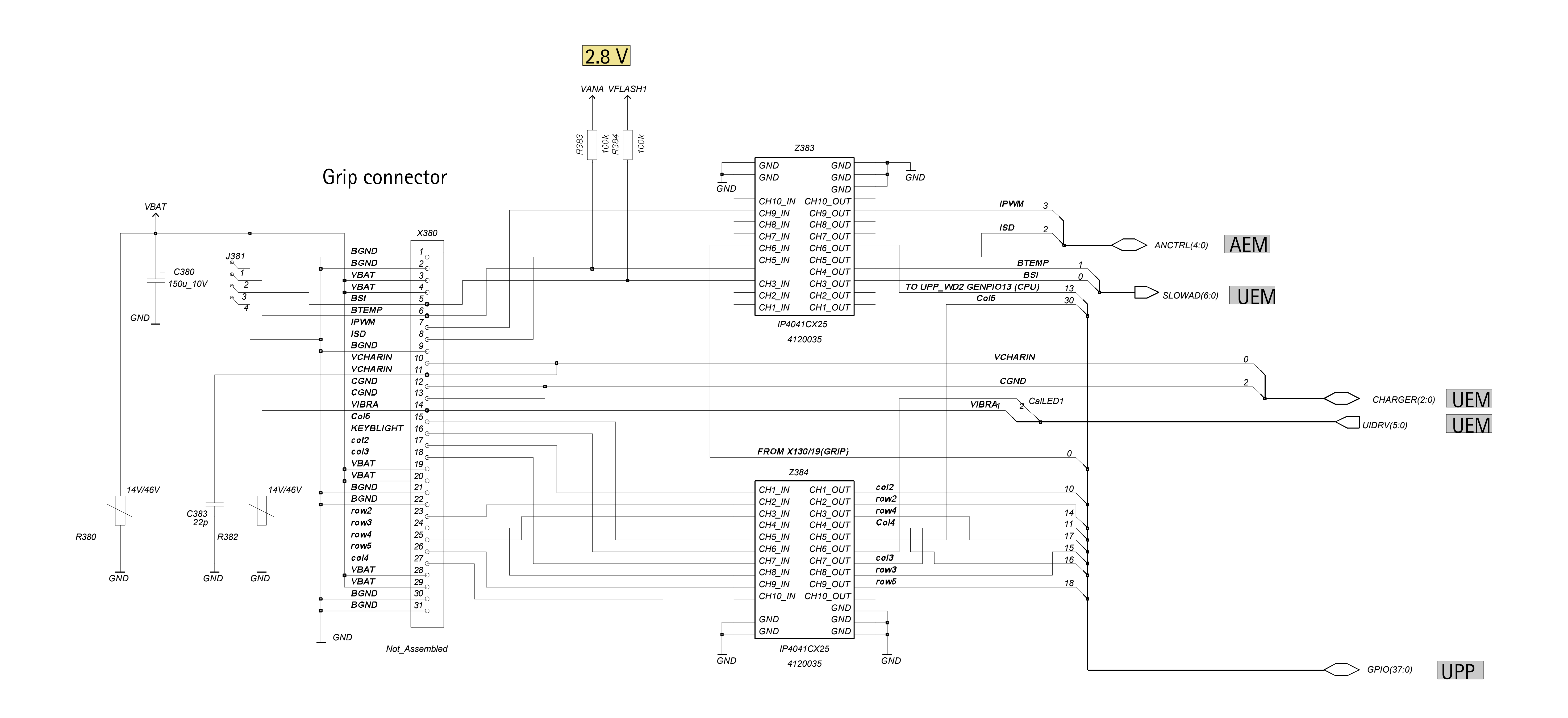
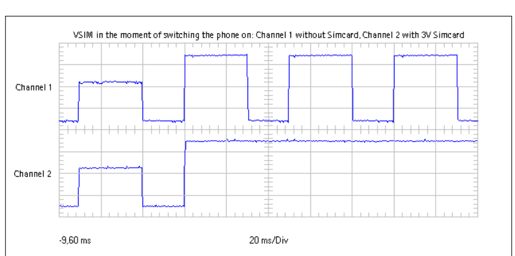
Modified : 05.11.2002




2.8 V
VANA VFLASH1
R383 100k
R384 100k
Grip connector
Z383
IP4041CX25
4120035
Z384
IP4041CX25
4120035
X380
Not_Assembled
J381
VBAT
C380 150u_10V
GND
C383 22p
R380
R382
14V/46V
BGND
VBAT
BSI
BTEMP
IPWM
ISD
VCHARIN
CGND
VIBRA
Col5
KEYBLIGHT
col2
col3
row2
row3
row4
row5
col4
ANCTRL(4:0)
AEM
SLOWAD(6:0)
UEM
TO UPP_WD2 GENPIO13 (CPU)
CHARGER(2:0)
UIDRV(5:0)
CalLED1
FROM X130/19(GRIP)
GPIO(37:0)
UPP

Modified : 05.11.2002



32.768kHz at C201

32.768kHz at C200

Released key 3.8 V

32 kHz 1.0 Vpp

Not used

2.8V

2.8V

1.8 V

Rx IQ

Tx IQ

TXC

AFC

Hagar

Power input filtering

HAGAR

Voltage low

Voltage high

Ambient light sensor

AEM

1.35 V

2.8 V

2.8 V

2.8 V

2.8 V

2.8 V

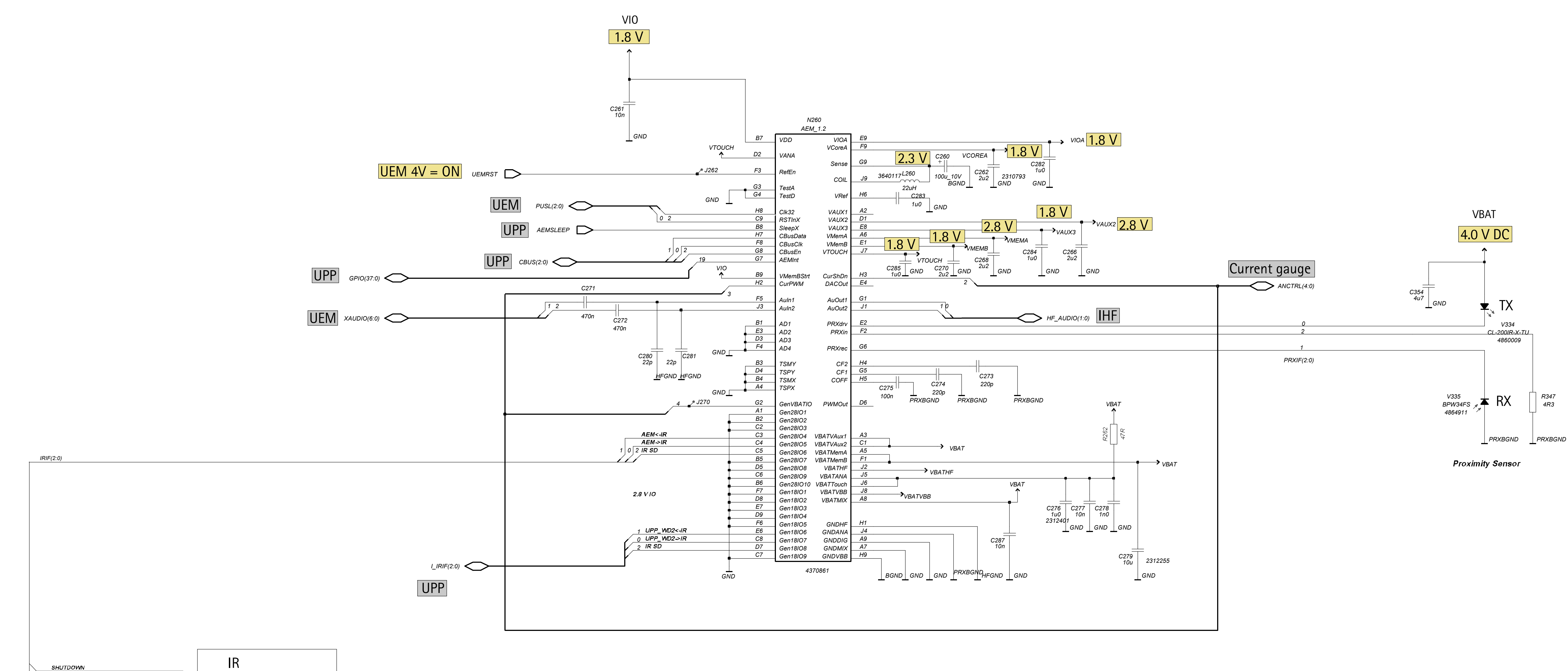
2.8 V

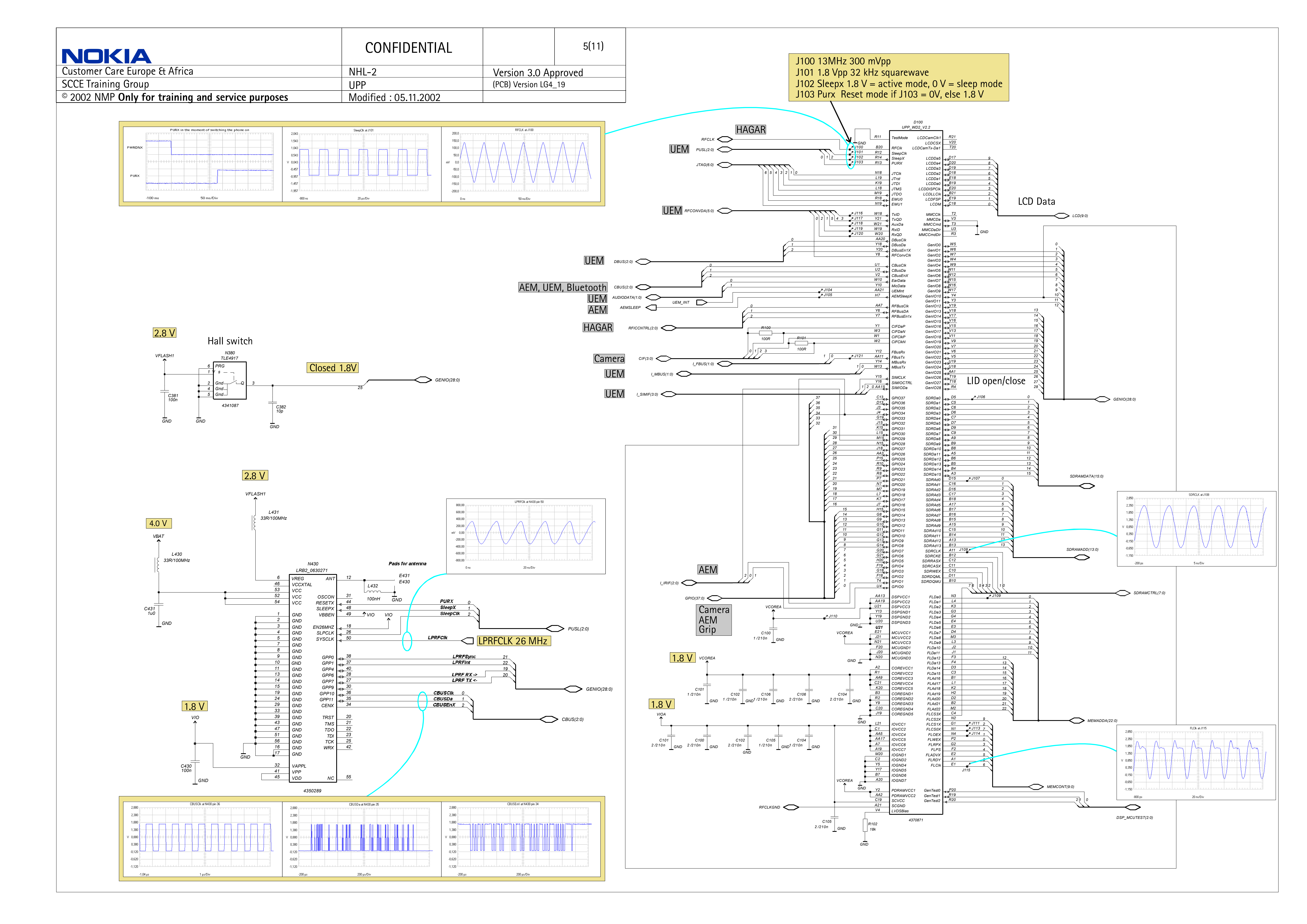
4.7 V

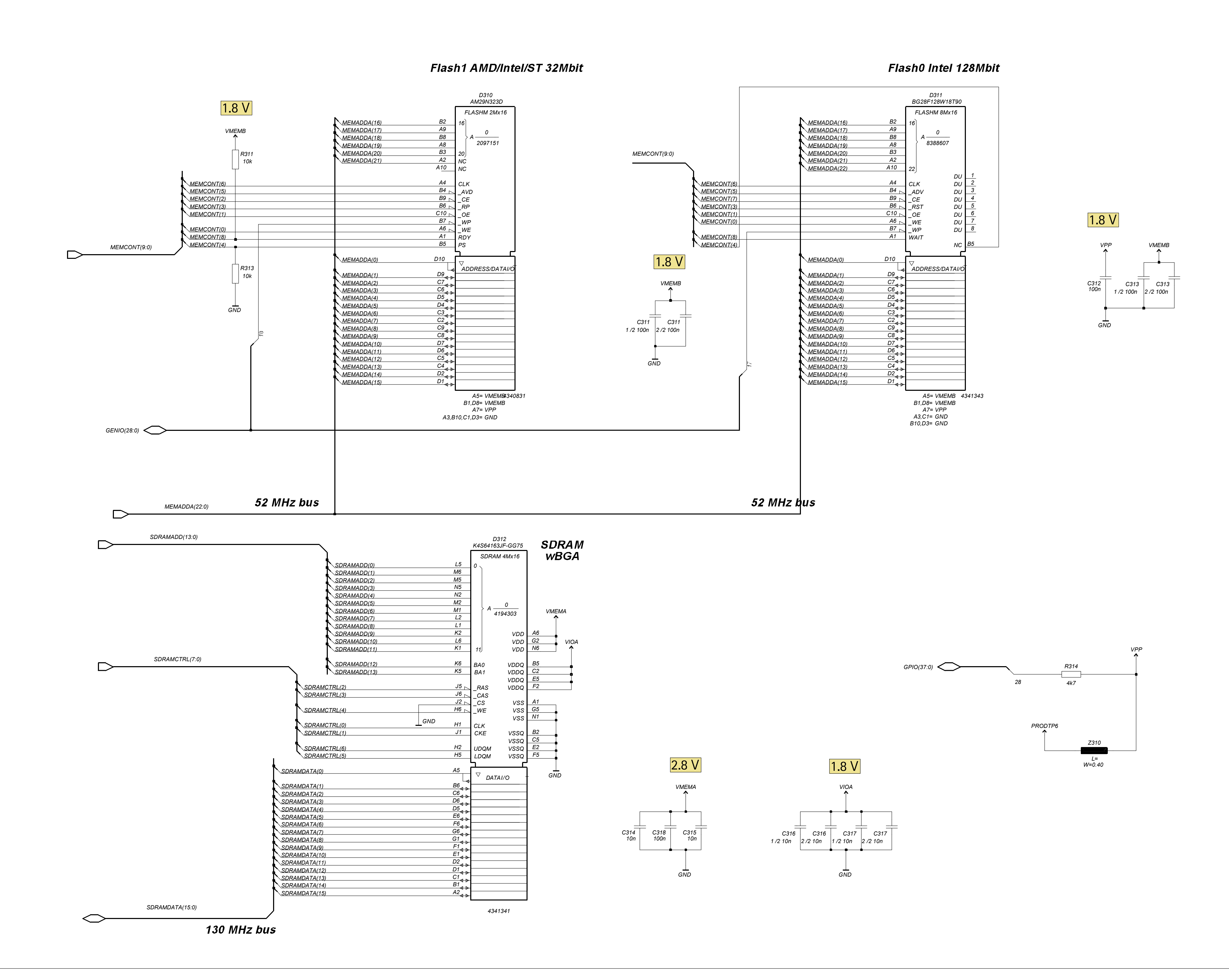
D190

UEM_V6.0_WDOGS_ENABLED_CROLLES

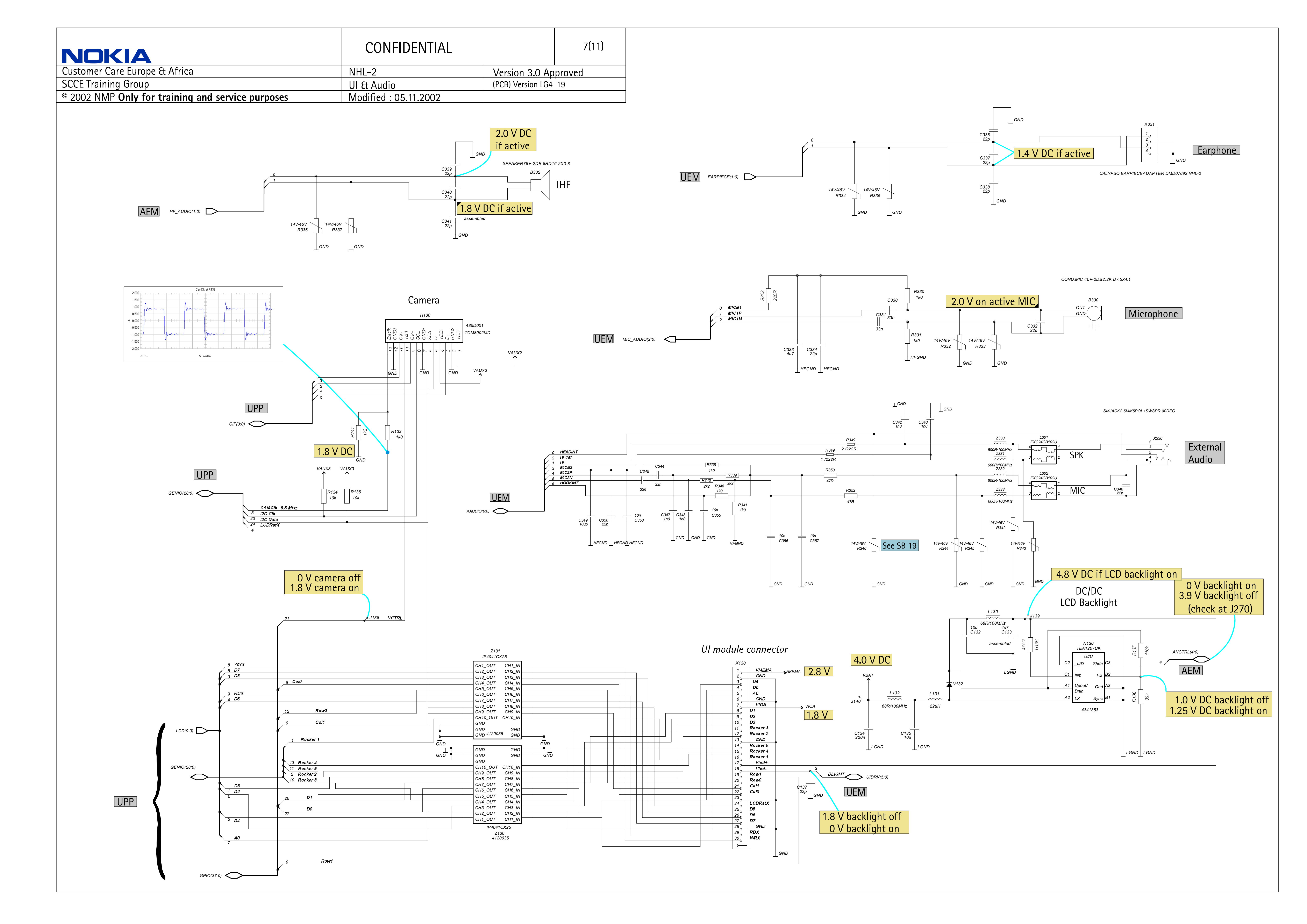
4370841

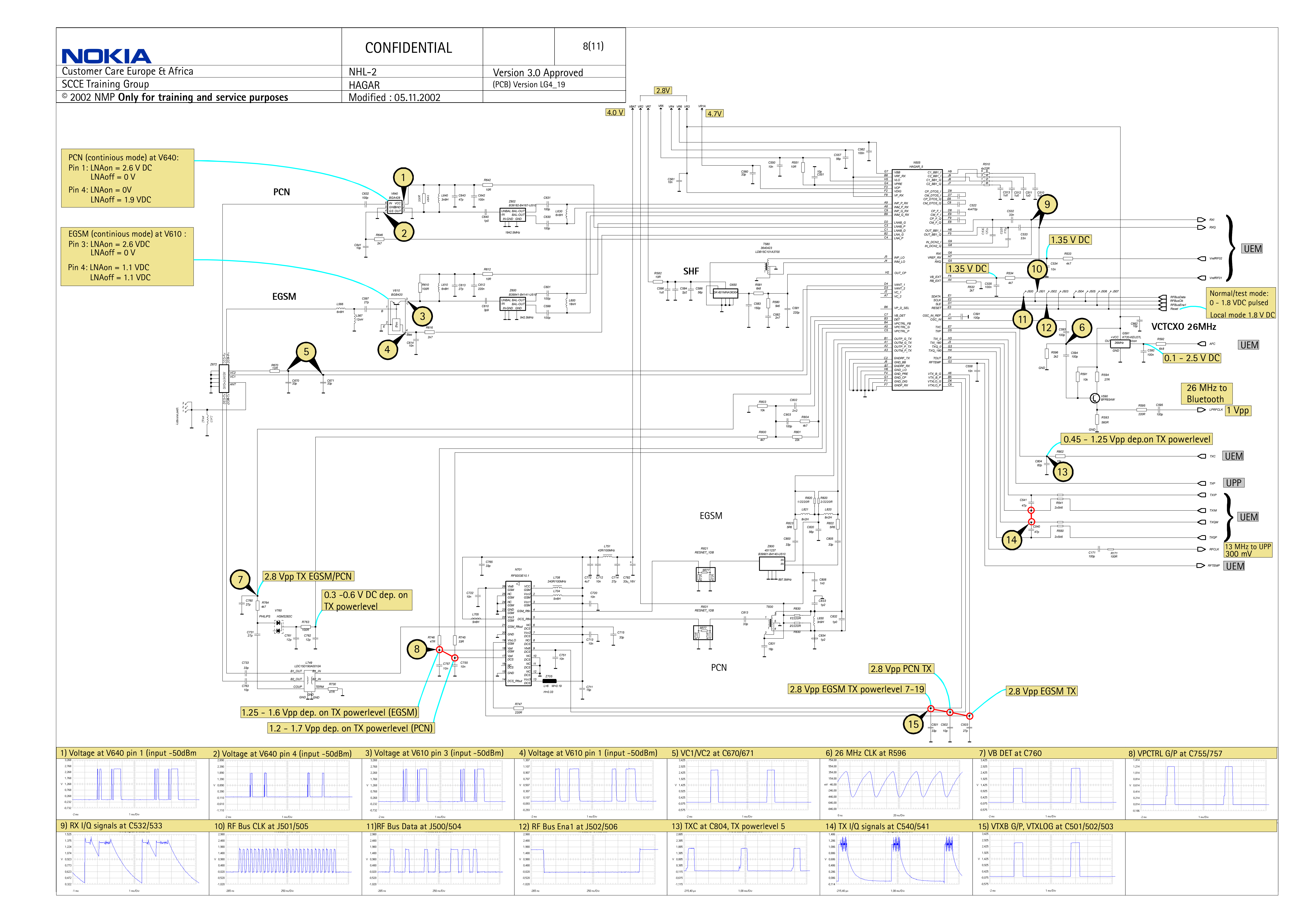

VIO
1.8 V
N260
AEM_1.2
UEM 4V = ON
UEM
UPP
UPP
UPP
UEM
1.8 V
1.8 V
2.3 V
1.8 V
2.8 V
2.8 V
1.8 V
1.8 V
VBAT
4.0 V DC
Current gauge
TX
RX
IHF
Proximity Sensor
UPP
IR
VBAT
4.0 V
2.8 V
VMEMA
GND

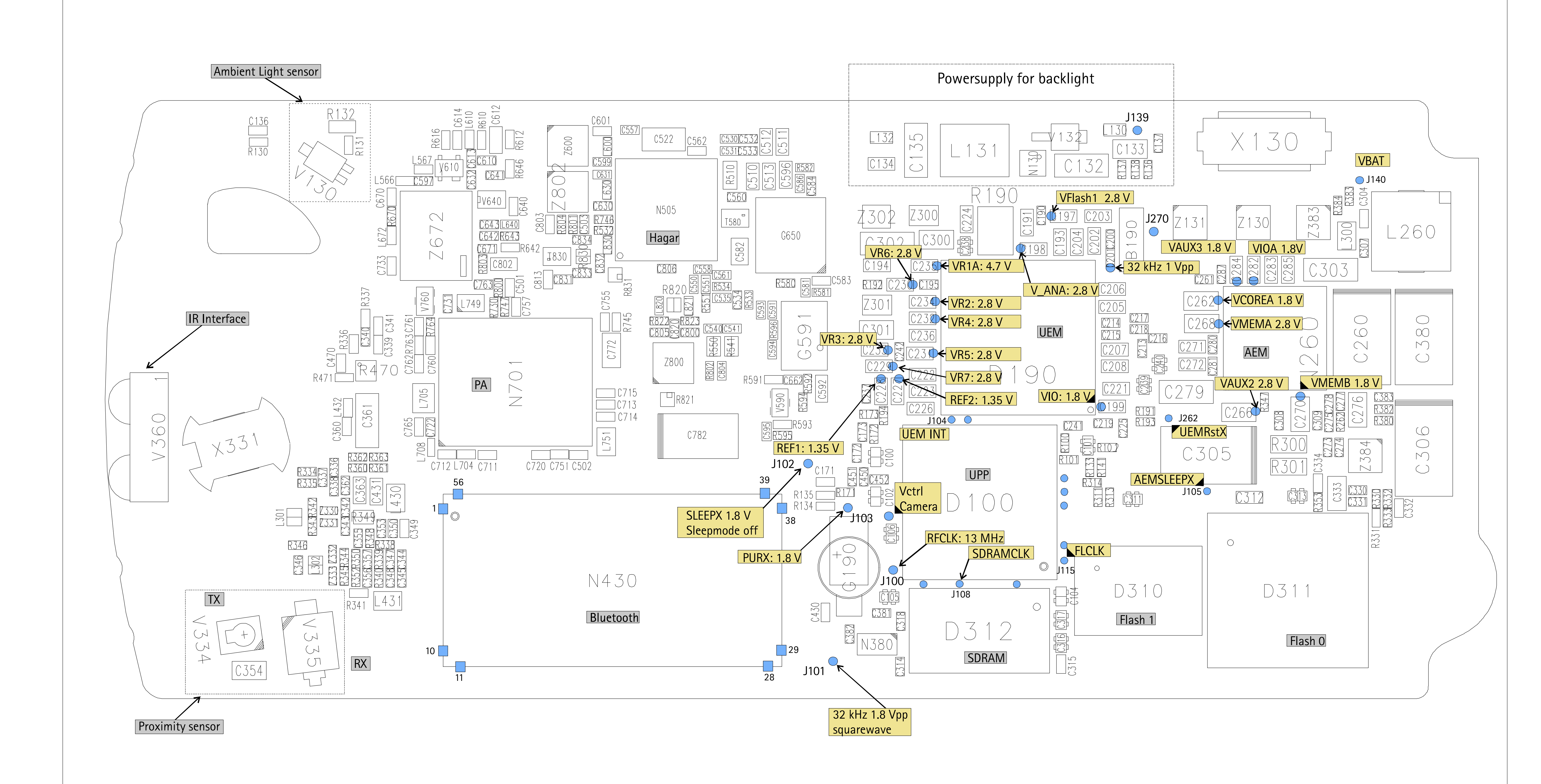

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NHL-2
UPP
Modified : 05.11.2002
Version 3.0 Approved
(PCB) Version LG4_19
J100 13MHz 300 mVpp
J101 1.8 Vpp 32 kHz squarewave
J102 Sleepx 1.8 V = active mode, 0 V = sleep mode
J103 Purx Reset mode if J103 = 0V, else 1.8 V
HAGAR
UEM
LCD Data
UEM
UEM
AEM, UEM, Bluetooth
UEM
AEM
HAGAR
Camera
UEM
UEM
LID open/close
2.8 V
Hall switch
Closed 1.8V
2.8 V
4.0 V
AEM
Camera
AEM
Grip
1.8 V
1.8 V
LPRFCLK 26 MHz
1.8 V
Pads for antenna
D100
UPP_WD2_V2.2
N430
LRB2_0630271
N380
TLE4917
GENIO(28:0)
SDRAMDATA(15:0)
SDRAMADD(13:0)
SDRAMCTRL(7:0)
MEMADDA(22:0)
MEMCONT(9:0)
DSP_MCUTEST(2:0)
PUSL(2:0)
CBUS(2:0)
RFCLKGND



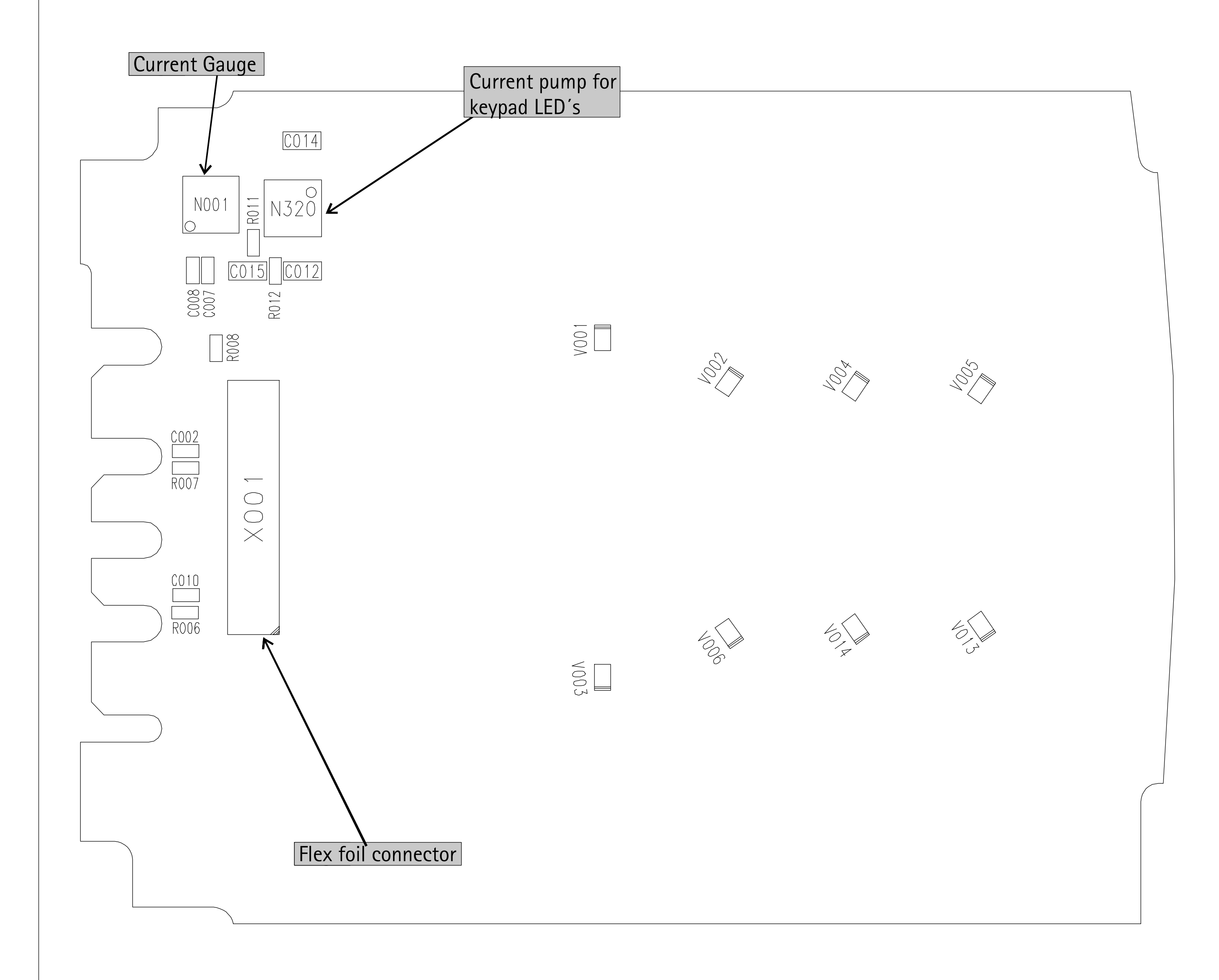
Flash1 AMD/Intel/ST 32Mbit
Flash0 Intel 128Mbit
D310
AM29N323D
FLASHM 2Mx16
D311
BG28F128W18T90
FLASHM 8Mx16
1.8 V
VMEMB
R311
10k
R313
10k
GND
MEMCONT(9:0)
GENIO(28:0)
MEMADDA(22:0)
52 MHz bus
52 MHz bus
ADDRESS/DATA I/O
A5= VMEMB 4340831
B1,D8= VMEMB
A7= VPP
A3,B10,C1,D3= GND
A5= VMEMB 4341343
B1,D8= VMEMB
A7= VPP
A3,C1= GND
B10,D3= GND
C311
1 /2 100n
C311
2 /2 100n
VPP
C312
100n
C313
1 /2 100n
C313
2 /2 100n
SDRAMADD(13:0)
SDRAMCTRL(7:0)
SDRAMDATA(15:0)
D312
K4S64163JF-GG75
SDRAM 4Mx16
SDRAM
wBGA
VMEMA
VIOA
DATA I/O
4341341
130 MHz bus
2.8 V
C314
10n
C318
100n
C315
10n
C316
1 /2 10n
C316
2 /2 10n
C317
1 /2 10n
C317
2 /2 10n
GPIO(37:0)
R314
4k7
PRODTP6
Z310
L=
W=0.40


2.0 V DC if active
1.8 V DC if active
IHF
AEM
UEM
1.4 V DC if active
Earphone
Camera
2.0 V on active MIC
Microphone
UPP
1.8 V DC
External Audio
SPK
MIC
See SB 19
0 V camera off
1.8 V camera on
4.8 V DC if LCD backlight on
DC/DC
LCD Backlight
0 V backlight on
3.9 V backlight off
(check at J270)
UI module connector
4.0 V DC
2.8 V
1.8 V
1.0 V DC backlight off
1.25 V DC backlight on
1.8 V backlight off
0 V backlight on

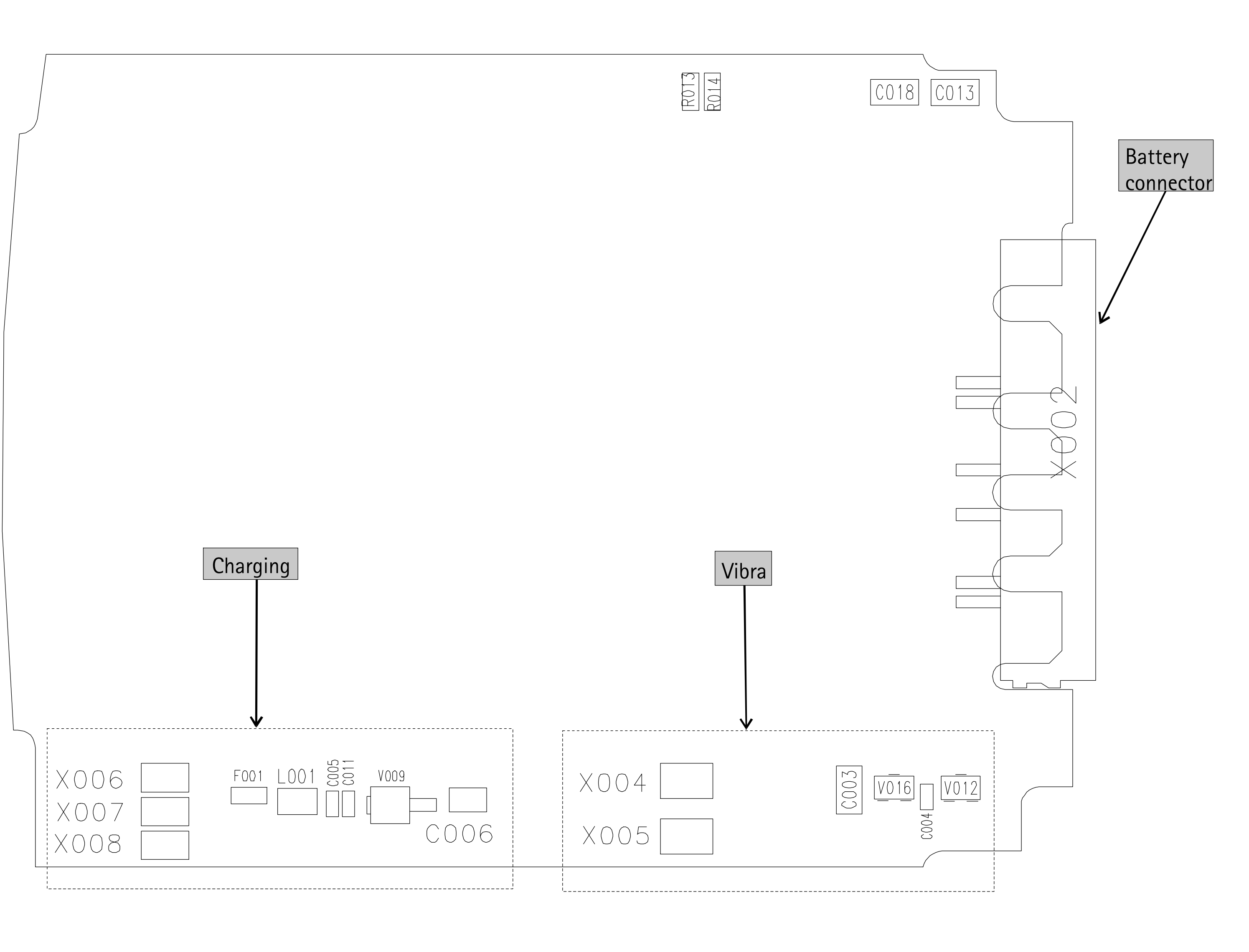

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NHL-2
HAGAR
Modified : 05.11.2002
Version 3.0 Approved
(PCB) Version LG4_19
PCN (continious mode) at V640:
Pin 1: LNAon = 2.6 V DC
LNAoff = 0 V
Pin 4: LNAon = 0V
LNAoff = 1.9 VDC
EGSM (continious mode) at V610 :
Pin 3: LNAon = 2.6 VDC
LNAoff = 0 V
Pin 4: LNAon = 1.1 VDC
LNAoff = 1.1 VDC
PCN
EGSM
SHF
2.8V
4.0 V
4.7V
1.35 V DC
1.35 V DC
UEM
Normal/test mode:
0 - 1.8 VDC pulsed
Local mode 1.8 V DC
VCTCXO 26MHz
UEM
0.1 - 2.5 V DC
26 MHz to Bluetooth
1 Vpp
0.45 - 1.25 Vpp dep.on TX powerlevel
UEM
UPP
UEM
13 MHz to UPP
300 mV
UEM
EGSM
PCN
2.8 Vpp TX EGSM/PCN
0.3 -0.6 V DC dep. on TX powerlevel
1.25 - 1.6 Vpp dep. on TX powerlevel (EGSM)
1.2 - 1.7 Vpp dep. on TX powerlevel (PCN)
2.8 Vpp PCN TX
2.8 Vpp EGSM TX powerlevel 7-19
2.8 Vpp EGSM TX
1) Voltage at V640 pin 1 (input -50dBm)
2) Voltage at V640 pin 4 (input -50dBm)
3) Voltage at V610 pin 3 (input -50dBm)
4) Voltage at V610 pin 1 (input -50dBm)
5) VC1/VC2 at C670/671
6) 26 MHz CLK at R596
7) VB DET at C760
8) VPCTRL G/P at C755/757
9) RX I/Q signals at C532/533
10) RF Bus CLK at J501/505
11)RF Bus Data at J500/504
12) RF Bus Ena1 at J502/506
13) TXC at C804, TX powerlevel 5
14) TX I/Q signals at C540/541
15) VTXB G/P, VTXLOG at C501/502/503



Ambient Light sensor
Powersupply for backlight
IR Interface
Proximity sensor
TX
RX
VBAT
J140
J139
VFlash1 2.8 V
J270
VAUX3 1.8 V
VIOA 1.8V
32 kHz 1 Vpp
VR6: 2.8 V
VR1A: 4.7 V
V_ANA: 2.8 V
VCOREA 1.8 V
VMEMA 2.8 V
VR2: 2.8 V
VR4: 2.8 V
UEM
AEM
VR3: 2.8 V
VR5: 2.8 V
VR7: 2.8 V
REF2: 1.35 V
VIO: 1.8 V
VAUX2 2.8 V
VMEMB 1.8 V
J262
UEMRstX
J104
UEM INT
REF1: 1.35 V
J102
UPP
D100
AEMSLEEPX
J105
Vctrl
Camera
SLEEPX 1.8 V
Sleepmode off
J103
PURX: 1.8 V
RFCLK: 13 MHz
SDRAMCLK
FLCLK
J115
J100
J108
D310
Flash 1
D311
Flash 0
D312
SDRAM
N430
Bluetooth
PA
N701
Hagar
N505
G650
J101
32 kHz 1.8 Vpp
squarewave



Current Gauge
Current pump for keypad LED´s
C014
N001
N320
R011
C015
C012
C008
C007
R012
R008
V001
V002
V004
V005
C002
R007
X001
C010
R006
V006
V014
V013
V003
Flex foil connector

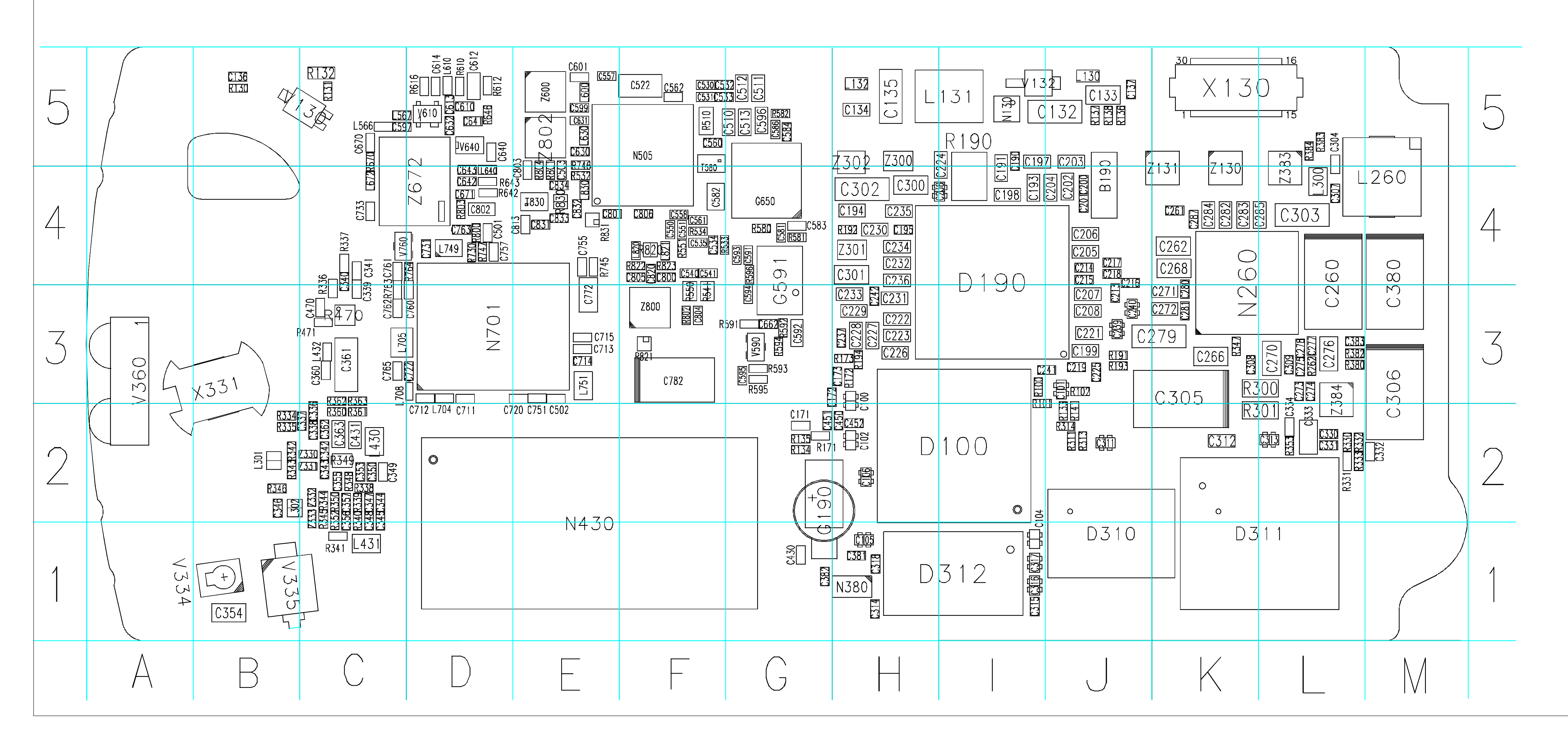


R013
R014
C018
C013
Battery connector
X002
Charging
Vibra
X006
X007
X008
F001
L001
C005
C011
V009
C006
X004
X005
C003
V016
V012
C004

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Customer Care Europe & Africa	NHL-2	Version 3.0 Approved
SCCE Training Group	Layouts	(PCB) Version LG4_19
Only for training and service purposes	Modified : 05.11.2002	

B	C194 - H4	C221 - J3	C242 - H3	C284 - K4	C318 - H1	C353 - C2	C503 - E4	C581 - G4	C632 - D5	C760 - D3	D	L432 - C3	N430 - E1/D1	R172 - H3	R336 - C3	R380 - L3	R595 - G3	R804 - E4	X
B190 - J4	C195 - H4	C222 - H3	C260 - L3/L4	C285 - L4	C330 - L2	C354 - B1	C511 - G5	C582 - F4	C640 - D5	C761 - C4	D100 - I2	L566 - C5	N505 - F4/5	R173 - H3	R337 - C4	R382 - L3	R596 - G4	R820 - F4	X130 - K5/L5
C	C197 - I5	C223 - H3	C261 - K4	C287 - K4	C331 - L2	C355 - C2	C512 - G5	C583 - G4	C641 - D5	C762 - C3	D190 - I3/I4	L567 - C5	N701 -D3	R190 - I4/I5	R339 - C2	R383 - L5	R610 - D5	R821 - F3	X331 - B3
C100 - H3	C198 - I4	C224 - I4	C262 - K4	C300 - H4	C332 - M2	C357 - C2	C513 - G5	C584 - G5	C642 - D4	C763 - D4	D310 - J1/J2	L600 - E5	R	R191 - J3	R340 - C2	R384 - L5	R612 - D5	R823 - F4	Z
C101 - J3	C199 - J3	C225 - J3	C266 - K3	C301 - H4	C333 - L2	C360 - C3	C522 - F5	C586 - G5	C643 - D4	C765 - C3	D311 - K1/K2	L610 - D5	R100 - I3	R192 - H4	R341 - C1	R388 - C2	R616 - D5	R830 - E4	Z130 - K4/5
C102 - H2	C200 - J4	C226 - H3	C268 - K4	C302 - H4	C334 - L2	C361 - C3	C530 - F5	C591 - G4	C652 - G3	C772 - E3	D312 - I1/H1	L630 - E5	R101 - I3	R193 - J3	R342 - B2	R470 - C3	R642 - D4	R831 - E4	Z131 - K4/5
C104 - I1	C201 - J4	C227 - H3	C270 - L3	C303 - L4	C336 - C2	C362 -C2	C531 - F5	C592 - G3	C670 - C5	C782 - F3	G	L640 - D4	R102 - J3	R194 - H3	R343 - B2	R471 - C3	R643 - D4	T	Z300 - H5
C105 - H1	C202 - J4	C228 - H3	C271 - K3	C304 - L5	C337 -C2	C363 - C2	C532 - F5	C593 - G4	C671 - D4	C800 - F4	G190 - G2	L672 - C4	R130 - B5	R247 - K3	R344 -C2	R510 - F5	R646 - D5	T580 - F5	Z301 - H4
C106 - H2	C204 - J4	C229 - H3	C272 - K3	C305 - K3	C338 - C2	C380 - M3/4	C533 - F5	C594 - G3	C711 -D3	C801 - E4	G591 - G4	L704 - D3	R131 - C5	R262 - L3	R345 -C2	R532 - E4	R670 - C5	T830 - E4	Z302 - H5
C132 - J5	C205 - J4	C230 - H4	C273 - L3	C306 - M2/3	C339 - C3	C381 - H1	C534 - F4	C595 - G3	C712 - D3	C802 - D4	G650 - G4	L705 - C3	R131 - J5	R300 - L3	R346 - B2	R533 - F4	R691 - G3	V	Z330 -C2
C133 - J5	C206 - J4	C231 - H3	C274 - L3	C307 - L4	C340 - B1	C382 - G1	C535 - F4	C596 - G5	C713 - E3	C803 - E4	L	L708 - D3	R132 - C5	R301 - L2	R348 - C2	R534 - F4	R730 - D4	V130 - C5	Z331 - C2
C134 - H5	C207 - J3	C232 - H4	C275 - L3	C308 - K3	C341 - C4	C383 - L3	C540 - F4	C597 - C5	C714 - E3	C804 - F3	L130 - J5	L749 - D4	R133 - J2	R311 - J2	R349 - C2	R541 - F3	R743 - E5	V132 - I5	Z332 - C2
C135 - H5	C208 - J3	C233 - H3	C276 - L3	C309 - L3	C342 - C2	C430 - G1	C541 - F4	C599 - E5	C715 - E3	C805 - F4	L131 - I5	L751 - E3	R134 - G2	R313 - J2	R350 -C2	R550 - F3	R745 - E4	V334 - B1	Z333 - C2
C136 - B5	C213 - J3	C234 - H4	C277 - L3	C311 - J2	C343 - C2	C431 - C2	C550 - F4	C601 - E5	C720 - E3	C806 - F4	L132 - H5	L820 - F4	R135 - G2	R314 - J2	R352 -C2	R551 - F4	R747 - D4	V335 - B1	Z383 - L4/5
C137 - J5	C214 - J4	C235 - H4	C278 - L3	C312 - K2	C344 - C2	C450 - H2	C551 - F4	C610 - D5	C722 - D3	C813 - E4	L260 - M4/5	L821 - F4	R136 - J5	R330 - L2	R353 - L2	R580 - G4	R763 - C3	V360 - A3	Z384 - L3
C171 - G2	C215 - J4	C236 - H4	C279 - K3	C313 - L2	C345 - C2	C451 - G2	C557 - E5	C612 - D5	C731 - D4	C820 - F4	L300 - L4	L830 - E4	R137 - J5	R331 - L2	R356 -C2	R581 - G4	R764 - D4	V590 - G3	Z600 - E5
C172 - H3	C216 - J4	C237 - H3	C280 - K3	C314 - H1	C347 - C2	C452 - H2	C558 - F4	C613 - D5	C733 - C4	C831 - E4	L301 - B2	N	R138 - J5	R332 - L2	R360 - C2	R582 - G5	R800 - D4	V610 - D5	Z672 - D4/5
C173 - H3	C217 - J4	C239 - J3	C281 - K3	C315 - I1	C348 - C2	C470 - C3	C560 - F5	C614 - D5	C751 - E3	C832 - E4	L302 - B2	N130 - I5	R139 - J5	R333 - L2	R361 - C2	R591 - G3	R801 - E4	V640 - D5	Z800 - F3
C191 - I4	C218 - J4	C240 - J3	C282 - K4	C316 - I1	C349 - C2	C501 - D4	C561 - F4	C630 - E5	C755 - E4	C833 - E4	L430 - C2	N260 - K3/K4	R141 - J2	R334 - B2	R362 - C3	R592 - G3	R802 - F3	V760 - C4	Z802 - E5
C193 - I4	C219 - J3	C241 - J3	C283 - K4	C317 - I1	C350 - C2	C502 - E3	C562 - F5	C631 - E5	C757 - D4	C834 - E4	L431 - C1	N380 - H1	R171 - G2	R335 - B2	R363 - C3	R593 - G3	R803 - D4		



Components on Layout Ls4 V.16

C	L	V016
C002	L001	X
C003	N	X001
C004	N001	X004
C005	N320	X005
C006	R	X006
C007	R007	X007
C008	R008	X008
C011	R011	
C012	R012	
C013	R013	
C014	R014	
C015	V	
C016	V001	
C017	V002	
C018	V003	
E	V004	
E001	V005	
E002	V006	
E003	V009	
E004	V012	
F	V013	
F001	V014	